ACTUARIAL VALUATION OF PROPERTY/CASUALTY INSURANCE COMPANIES

ROBERT W. STURGIS

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DISCUSSION BY STEPHEN P. LOWE

"For what is Worth in anything,
But so much Money as 'twill bring."
—Samuel Butler

Mr. Sturgis's paper presents a comprehensive model for the actuarial valuation of a property/casualty acquisition candidate. As he points out, this topic is a new one to our *Proceedings*; it is therefore also likely to be a new topic to many members of the profession. Mr. Sturgis's paper presents another example of the expanding role of the property/casualty actuary and actuarial techniques in insurance and in the general economy.

Of particular interest to this reviewer are the relationships between the actuarial valuation process of a property/casualty company as presented in the model and the general economic principles that underlie any decision process relating to the sale or acquisition of an entity. This review will, therefore, focus initially on these relationships in an attempt to gain additional insight into the power and versatility of the actuarial valuation model.

THE ECONOMICS OF VALUE

Mr. Sturgis reviews several alternative measures of the value of an insurance company, including its market value as measured by outstanding common stock, its book value as measured by its balance sheet, and its comparative value as measured by analogy to recent purchase prices of similar companies. Two other measures of value are dilution value, representing the price above which the buyer's overall return on equity would be reduced; and economic value, defined as the present value of future earnings.

Mr. Sturgis points out that all these measures of value are related to, but not necessarily the same as, the purchase price the buyer is willing to pay for the company to be acquired.

This distinction, between the "value in use" and the "value in exchange" of an object, can be found throughout classical economics literature and is attributed to Aristotle. Value in use is the utility that something has in and of itself. Value in exchange is what that object will fetch in the marketplace. The former is intrinsic to the object; the latter is dependent on the relationship between supply and demand.

Value in use and value in exchange can be related by recognizing that in the marketplace a transaction will not be consummated unless *both the buyer and the seller receive a greater economic benefit than they give up*. This is possible because the two parties' valuations of the exchange are not the same. The seller of apples cannot possibly use all that he has; the cash that he obtains is, therefore, of greater value to him than the apple he sells. The hungry buyer is equally willing to part with a small amount of cash for the greater benefit gained from the apple that he obtains.

These concepts can be summarized by the following inequality relating price and economic value of an object being sold:

$$\begin{matrix}\textit{Value in Use} \\ \textit{to the Seller}\end{matrix} \leq \begin{matrix}\textit{Value in} \\ \textit{Exchange}\end{matrix} \leq \begin{matrix}\textit{Value in Use} \\ \textit{to the Buyer}\end{matrix}$$

If this inequality were not satisfied, no exchange would take place; each party would keep what he already has.

Of course it must be recognized that value in use is individual and subjective, being a function of relative needs, desires, preferences, and/or utilities at a given point in time.

CONSIDERATIONS IN VALUING A PROPERTY/CASUALTY COMPANY

In the context of property/casualty acquisitions, Mr. Sturgis has provided us with a model whereby value in use (the capitalized value of anticipated future earnings) can be quantified. However, he only touches on the considerations of the two frames of reference cited above, i.e., those of buyer and seller.

Mr. Sturgis's model can be run, at least in theory, in two different modes for the given acquisition being considered. First, a simulation depicting the seller's current use of the company can be run to determine the minimum price that would be prudently acceptable to the seller's management. Second, a simulation depicting the buyer's projected use of the company can be run to determine a corresponding maximum price.

The final price presumably would fall within the range imposed above, being dependent on such market factors as the availability of alternative acquisition

candidates to the buyer (supply) and alternative purchasers to the seller (demand). Since this market lacks great numbers of buyers and sellers the relative urgency of the sale or purchase becomes an important related factor.

Of the two valuation modes above, the seller's current use of the company undoubtedly is the easier to simulate and project, since such a projection presumably involves a continuation of the status quo of the company. This is, of course, not necessarily the case; the alternative to sale might be liquidation.

On the other hand, the intended use of the acquisition by the buyer requires more careful consideration, centering on two principal areas:

1. Explicit changes in the operations of the acquired company.

   These may take the form either of planned changes imposed by the new management, or of changes precipitated directly by and resulting from the acquisition.

2. The revenue and earnings of the acquisition taken within the context of the new parent.

   Mr. Sturgis refers to this aspect at the conclusion of his paper when he alludes to the "operational and financial synergism with the existing operations." Key elements in this area would be presumed rates of premium growth and federal income taxes.

Outlined below are some specific operational aspects that might deserve consideration.

General Expenses. If the buyer is an existing insurance company the elimination of duplicative administrative activities may serve to reduce future costs in this area.

Reinsurance. The reinsurance program of the company being reviewed is based on the level of risk that it is willing to retain. The acquiring company may wish to alter the existing program to suit its own preferences. For example, a small stand-alone company being acquired by a larger one may have retentions substantially below those of its new parent.

Consolidation of Physical Plant. Mr. Sturgis points out that adjustments to the statutory net worth of a company should be made to reflect non-admitted assets. One specific and potentially significant item is the physical plant of the company under consideration: furniture, fixtures, and the excess of market over admitted value of the building itself, if owned. If the acquisition involves the eventual consolidation of operations it may be appropriate to include the additional value

of these items with realizable earnings based on their expected time of sale. (Account also must be taken of the potential capital gains tax resulting from such a sale.)

Acquisition Costs. A rather fundamental operational question is whether or not the company being acquired will continue marketing its products in the manner currently employed; for example, the marketing approach might be modified to tie in with the approach used for the other products sold by the would-be parent (Sears/Allstate is perhaps the best illustration). If modification is planned, the future acquisition costs should reflect the modification.

When one company purchases another a reasonable assumption is that the motivation for the acquisition is the enhancement of existing operations through the potential synergism of their combination. This enhancement can involve several areas:

Marketing. The acquisition may add a complementary good or service that will enhance the marketing of existing product lines. Alternatively the acquisition may provide direct access to a new geographic market at less cost than building one from scratch.

Cash-Flow. Different industries require different amounts of cash. Such differences may be intrinsic, seasonal, or related to the business or marketing cycle of the products involved.

Smoothing of Earnings. Similarly, industries vary as to the sensitivity of their earnings to general business and economic conditions.

Federal Income Taxes. Both the tax treatment of the acquisition itself and the consolidation of returns subsequent to the acquisition may generate substantial benefits unattainable to the two entities separately.

Consideration of certain of the above areas may be outside the scope of an actuarial valuation, or indeed beyond the practical limits of any quantification process. However, it seems reasonable that a projection of future results could be performed so as to reflect the general intended use of the company by the buyer in these areas. Assumptions as to premium growth, lines of business written, underwriting and investment profitability can be constructed to conform to the buyer's as well as the seller's general business plan.

Such a valuation would not reflect fully the synergism of the acquisition, since the increased growth and profitability of the parent's original operation would not be included. The result would, therefore, fall below the true upper bound to the purchase price.

TAX CONSEQUENCES OF THE ACQUISITION

Certainly, the most complex aspect of any acquisition is an evaluation of its tax consequences. In illustrating his approach, Mr. Sturgis defined a single line insurance company subject to a 46% tax rate and with a fixed investment strategy of one-third of its assets in tax-exempts and the balance in taxables.

This approach treats the company being valued as a stand-alone entity for tax purposes. Such an approach is appropriate in presenting the seller's perspective, if in fact the company is a stand-alone entity.

In modeling the buyer's viewpoint, it is necessary to recognize that future earnings are subject to taxation within the context of the new parent's operations. The overall anticipated tax picture may in turn influence the assumed investment strategy. For example, if the new parent expects to show taxable losses on its operations, then the acquired company's investments presumably would be shifted to reflect a greater proportion of taxables. (This is a specific example of value in use to the buyer exceeding the seller's value in use.)

Finally, it is necessary to consider the tax consequences of the acquisition itself in obtaining a final value from the buyer's perspective. The acquisition can be handled in various ways, with differing tax consequences to the buyer (and seller). A discussion of acquisition tax issues and the implications of alternatives would be a suitable topic for an entire paper. Two key issues, for example, would be the treatment of existing loss carry-forwards and the tax-basis of the company's assets after the acquisition.

For an excellent introduction to the tax alternatives associated with acquisitions, the reader is referred to Lenrow, Milo, and Rua[1] which has an excellent chapter on this topic.

One specific tax option available to the purchasing corporation is the liquidation of the acquired company under Section 334(b)(2) of the Internal Revenue Code. Section 334(b)(2) provides that where property is received by a corporation upon the complete liquidation of another corporation, the basis of that property is the same as the basis of the stock acquired. This is important to the acquiring corporation because the subsequent depreciation of the property will be measured by the amount paid for the property rather than by the frequently much lower basis of the property in the hands of the acquired corporation.

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[1] Gerald Lenrow, Ralph Milo, Anthony Rua, *Federal Income Taxation of Insurance Companies*, Third Edition, John Wiley & Sons, Inc., New York, 1979.

Under such a liquidation plan, the purchase price of the stock is allocated, based on fair market value, to all of the assets of the acquired company, including goodwill and the value of the company's existing business.

Since goodwill is not deductible or amortizable for tax purposes, it is important to properly value the other assets of the company. This includes the valuation of the existing business as a "wasting asset." The value of existing business can be considered a "wasting asset" only if it can be demonstrated that the business has a definite value distinct from goodwill and an ascertainable limited useful life.

A model of the form described by Mr. Sturgis can be used to determine the value of this item. Rather than being used to project the future earnings of all the company's business, the same model can be used to project the future earnings of only those portions that fall within the context of the "wasting asset."

OTHER ALTERNATIVE USES OF THE MODEL

The alternative use described above suggests that the model can be used to value various "blocks" of a company's book of business, rather than the company as a whole. This in turn suggests that the model can be used in a non-acquisition situation to evaluate and value alternative corporate strategies. By inputting alternative assumptions and comparing the resulting values, a company could evaluate the consequences of major marketing, underwriting, or financial decisions it is contemplating.

Several interesting uses might include:

A multiple lines national company considering the surrender of its license in a habitually unprofitable state could use the model to get a clearer picture of the potential impact on its overall operation.

An agency company considering conversion to direct writing could, similarly, evaluate the timing of the likely costs and benefits of such a conversion.

A company considering a change in claim settlement practices (such as a major program to lump-sum settle workers' compensation cases) could use the model to obtain a clearer picture of the overall consequences of such a change.

A company shifting from undiscounted to discounted loss reserves could evaluate the financial implications of such a move.

While the model might not be able to provide all the answers in situations such as those described above, it could be very useful by providing a baseline from which additional questions can be raised.

CONCLUSION

Mr. Sturgis's paper provides us with a new and powerful valuation technology. His paper illustrates the model's use in its "normative" state, but the model's uses extend to many different contexts, both within and outside the acquisition arena.

DISCUSSION BY ROBERT ROTHMAN AND ROBERT V. DEUTSCH

Introduction

The valuation of property/casualty insurance companies is a topic that has been neglected in the actuarial, financial, and economic communities. As Mr. Sturgis points out, there has been a notable increase in property/casualty insurance company acquisition and merger activity. Hence, his paper represents a needed and timely addition to the existing body of literature, and we hope that it provides the impetus for further research in this area.

Mr. Sturgis makes a number of points that we believe are important and that we will highlight in the following discussion. He concludes that a model based on a statutory earnings stream is appropriate for measuring the economic value of a firm. The use of statutory earnings to value an insurance company dates back to James Anderson's 1959 paper[1] and, to our knowledge, has not been contested as an accurate measure of value.

As an alternative, we believe that a model based on discounted cash flow has several advantages. Although such an approach has not been applied specifically to the property/casualty insurance industry, the use of discounted cash flow as a valuation technique has been well addressed and accepted by the business community, particularly in a capital budgeting framework. An application of this concept to a property/casualty company is discussed later in this review.

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[1] James C. H. Anderson, "Gross Premium Calculations and Profit Measurement for Non-Participating Insurance," *Transactions, Society of Actuaries*, Vol. XI (1959), p. 357.